DOCUMENT RESUME

ED 399 699 EC 305 030

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TITLE General Classroom Structural Interventions for Teaching Students with Attention Deficit Disorder-Hyperactivity Disorder (ADD-HD).
PUB DATE [96]
NOTE 14p.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Attention Deficit Disorders; *Classroom Design; *Classroom Environment; Classroom Techniques; Educational Environment; Educational Strategies; Elementary Education; *Environmental Influences; *Hyperactivity; *Inclusive Schools; Intervention; Peer Influence; Space Utilization; Stimulation

ABSTRACT

This paper examines structural antecedent classroom interventions to assist general classroom teachers in educating children with Attention Deficit Disorder-Hyperactivity Disorder (ADD-HD). The effectiveness of early classroom intervention models is explored. Modifications to physical classroom arrangements are evaluated, including open classrooms, centers, reduced space versus enlarged space, and various arrangement of desks. The paper presents information that supports the need for children with ADD-HD to have a highly structured environment. Although open classrooms in general are not recommended, open classrooms or traditional classrooms that are arranged in centers are suggested to be effective. The paper notes that there is limited research to support the use of study carrels for students with ADD-HD. Cluster seating, because it promotes student interaction, is not recommended for students with ADD-HD, though seating well-behaved peers next to the child with ADD-HD is suggested. Questions are raised regarding past research that led to recommending reduced environmental stimuli for children with ADD-HD. The use of functionally stimulating, versus visually stimulating, bulletin boards is evaluated. The report emphasizes that no single educational program or strategy is suitable for all children with ADD-HD. Teachers are urged to use the input of parents and special education practitioners in developing an individualized education program for a child with ADD-HD. (Contains 10 references.) (CR)

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General Classroom Structural Interventions For Teaching Students With Attention Deficit Disorder - Hyperactivity Disorder (ADD-HD)

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ABSTRACT

This paper will examine some structural antecedent classroom interventions specifically designed to help teachers who have students diagnosed with Attention Deficit Disorder - Hyperactivity Disorder (ADD-HD). After a discussion about the role of structural classroom interventions in general, the paper will reflect on two early intervention models from the 60's that selected interventions were in part based on. The paper divides the selected interventions into the following two broad areas: physical classroom arrangement and stimulation of the environment. Under physical classroom arrangement, the interventions explored deal with discussions about open classrooms, mastery centers, room size, and desk arrangement. Under the stimulation of the environment category, the discussion presents arguments regarding interventions calling for reduced versus increased environmental stimuli. The conclusions drawn from this research indicate that no singleclassroom intervention is a panacea for every student with ADD-HD. Each student's needs must be carefully evaluated prior to implementing any antecedent structural classroom intervention.

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GENERAL CLASSROOM STRUCTURAL INTERVENTIONS FOR TEACHING STUDENTS WITH ATTENTION DEFICIT DISORDER - HYPERACTIVITY DISORDER (ADD-HD)

INTRODUCTION

This paper will explore selected time-tested antecedent structural classroom interventions that could be useful for general classroom teachers to use to help their students with ADD-HD. First, the paper will discuss the role of structural classroom interventions in general and explain how they are just one cornerstone in the multi-modal treatment for ADD-HD. Second, it will briefly discuss the effectiveness of some of the early classroom intervention models used to intervene in the classroom. Next, the paper will compare and contrast modifications to physical classroom arrangement and the need for a stimulating learning environment. The interventions selected for inclusion in this research are not meant as a step-by-step, all-encompassing classroom management or educational system. Goldstein (1994) stated that students are unique and very different in their learning styles just as teachers are unique in their teaching styles. The guidelines and suggestions offered are presented in a generic fashion. It is up to the general classroom teacher to understand their particular interactional style and make use of the specific interventions that may fit within that style (Goldstein, 1994).

Since this paper focuses on only structural educational planning for students with ADD-HD, it is assumed that the reader (teacher) already has a basic understanding of the definition, characteristics, causes, classifications, and treatments for this health impairment. The reader is reminded that there are numerous other classroom interventions available to employ that deal

with organization and attention challenges with students with ADD-HD, but the focus of this paper is strictly on selected structural ones. Finally, there will be no distinction made in this paper between the three categories of ADD-HD, predominantly inattentive type, predominantly hyper-active-impulsive type, and combined type (Barkley, 1990).

CLASSROOM INTERVENTIONS IN GENERAL

Classroom interventions are generally categorized within the three primary traits of ADD-HD, attention, impulsivity, and hyperactivity, as identified by Nussbaum & Bigler in 1990 and Barkley in 1990. Several researchers have proposed that traditional classrooms are too restrictive for hyperactive children and have advocated the use of classrooms that afford a greater degree of freedom and flexibility. Although this approach has not been supported empirically, the use of classroom interventions is now wide-spread among schools in the United States (Barkley, 1990). Classroom interventions, sometimes called "educational planning," are but one of the four cornerstones in the treatment of individuals with attention deficit disorder-hyperactivity disorder (ADD-HD): those who have biological differences in the regulatory system of their brains which give them less-stable steering of their attention (ADD) and less-reliable control over the pace at which they think and act (HD) . The other three cornerstone treatment methods are through medical management, psychological counseling, and behavior modification (Goldstein, 1994).

Interventions for children with ADD-HD are generally labeled as either "antecedent" or "consequence." Antecedent interventions involve attempts to alter the environment so that desirable, prosocial behaviors are more likely occur and, conversely, undesirable behaviors are

less likely to occur. Thus, efforts are directed toward change "before" the problem presents itself. In common practice however, too much emphasis is placed on "consequence" interventions, or interventions that attempt to modify behavior through the application of positive or negative consequences. Consequence interventions are the oldest and still most commonly used interventions in classroom settings for all children (Goldstein, 1994).

The classroom intervention process is a diagnostic process initially, best implemented with the help of a special education teacher. One of the first steps involves the special education teacher helping the general classroom teacher define the child's behavioral difficulties and to specify the situations in which those difficulties are manifest. Once identified, problems can be prioritized and interventions developed. Interventions should be situation-specific, implemented within the classroom setting. Interventions are then stratified according to those that are designed to help the child manage himself versus those that alter the environment, thereby assisting the child to function more effectively (Lerner, Lowenthal, Lerner, 1995).

EARLY CLASSROOM INTERVENTIONS

Before we begin to explore the more modern and widely used interventions, it is important to reflect on previous early attempts to provide antecedent interventions for students with ADD-HD because they provide the framework from which more modern interventions were developed. Throughout this paper, reference will be frequently made to Fine's research in 1977 on the Strauss-Lehtinen-Cruickshank educational model (1961) and Hewett's Engineered classroom, which followed six years later. Fine (1977) determined that one of the most comprehensive early studies of educational planning specifically for hyperactive children was

reported by Cruickshank and his associates in 1961. A classroom was designed with all distracting environmental stimuli removed. After one year, the children in the experimental class were compared to a control group who had received traditional special-class educational programs. The experimental group made significant gains on the Bender-Gestalt test and Syracuse Visual Figure Background Test. A follow-up one year late indicated the experimental group had lost the gains found during the earlier testing. Therefore, Cruickshank was credited with only being moderately successful with the experiment (Fine, 1977).

Fine (1977) also studied another early intervention method called the Engineered Classroom, designed by Hewett in 1967. The program was similar to Cruickshank's but he added behavioral modification techniques. The classroom was highly organized and individualized. However, Hewett did not believe the removal of distracting stimuli was essential to learning environment. Nor did he believe the hypothesis of a need for a drab, sterile, non-stimulating environment. After the Engineered Classroom was evaluated by the Santa Monica, California school district in 1967, Hewett concluded that engineered classroom design appears to be particularly effective in "launching" children with attention deficit and hyperactive disorders and more actively involving them in attention, responding, and direction following (Fine, 1977).

PHYSICAL CLASSROOM ARRANGEMENT

The success of elementary teachers confronted with students with ADD-HD depends heavily on the degree of control and intensity of structure of the classroom environment (McFarland, Kolstad, Briggs, 1995). A highly structured classroom environment should be based on careful consideration of elements such as room size, seating arrangement, and type and size of desks,

and control of extraneous environmental stimuli (Fine, 1977). Three objectives can be met by attending to the organization of the classroom physical environment: decreasing noisiness and disruptions, increasing positive interactions with other students, and increasing on-task behavior (Gordon, 1994). In 1991, Johnson stated that the arrangement of the room should be such that the students with ADD-HD are more likely to be attracted to the teacher and their books than other social, visual, and auditory magnets.

Open Classrooms. In contrast to a highly structured physical environment, some ADD-HD students may be assigned to an "open classroom." This is generally a loosely-structured arrangement where multiple simultaneous instruction and multiple distractions are present in a large open-spaced area. This type arrangement is generally not as effective as a successful intervention for children with ADD-HD because an open classroom is generally noisier and contains more visual distractions. Barkley (1990) and Johnson (1991) agree that in light of research showing that noisy environments are associated with less task attention and higher rates of negative verbalizations among hyperactive children, open classrooms appear to be less appropriate for ADD-HD children.

Centers. However, open classrooms or traditional classrooms that are arranged in "centers" have been shown to be effective with students with ADD-HD. Fine (1977) stated that Hewett was the first to introduce the concept of centers in his Engineered Classroom. Hewett's classroom was divided into three major centers which paralleled the levels of Hewett's developmental sequence of educational goals: the mastery center, the exploratory center, and the

order center. Basic academic work was completed in the mastery center, which included student and teacher desks and two study booths for as-needed basis. The exploratory center had three subareas and was located near the windows and the sink. One subarea provided equipment for science experiments, another contained arts and crafts activities, and the third subarea provided a communication area containing group listening activities and games. The order center contained puzzles, exercises, and materials designed to enhance attending behavior and activities for following directions (Fine, 1977). To deconflict the earlier warnings of Barkley (1990) and Johnson (1991) regarding the use of open classrooms that have centers, more order and individualized instruction would be required in each center for effective implementation with ADD-HD students. In 1994, Weaver offered an alternative to centers with what he called a "project-based classroom." While similar to centers, the units of organization were more customized to the interests and capabilities of each ADD-HD student.

Reduced Space Versus Enlarged Space. The early models of Strauss-Lehtinen-Cruikshank believed that space should be reduced for the hyperactive child, so they employed the use of private cubicles or placing the child in a corner behind cabinets (Fine, 1977). There is limited research to support the use of these cubicles, also called study carrels. Fine (1977) went on to state that they appear to increase attending behavior and to some extent, increase performance in arithmetic and reading. However, teachers should be aware that the misuse of study carrels could lead to negative psychological effects on students with ADD-HD should they be used as a means of punishment or control. In contrast to confined space, Hewett experimented with a larger,

more open space arrangement, (not to the extent of an "open classroom," though). In Hewett's Engineered Classroom, students were seated further apart, had larger desks, and sometimes tables for independent work. The large work space permitted teachers to sit down beside the student as they worked together on a learning task (Fine, 1977).

Arrangement of Desks. Desks are usually arranged in either clusters or rows. Cluster seating promotes student interaction and is therefore not recommended for the child with ADD-HD since these children are more frequently prone to inappropriate and nonsocial behavior. Goldstein (1994) claimed it is preferable to use row seating. This reduces the chances that the child's needs for increased stimulation will negatively affect nearby classmates. This type seating also creates structured pathways, which Johnson (1991) stated is important to have available to permit the teacher to walk among students for observations and individualized instruction. If using row seating, it is highly desirable to locate the child with ADD-HD in the front row, center, because most teacher's attention is directed toward the person who occupies this position. It will be easier to observe and monitor the child's behavior if he or she sits in that seat. (Gordon, 1994). Fine's work from 1977 agrees with Gordon's in 1994. Fine (1977) stated that the hyperactive child's desk should not be near distracting areas such as windows and doors, and should be near the area of the room where relevant auditory and visual cues are usually presented--toward the front of the room.

Johnson (1991) argues that some teachers prefer to seat their ADD-HD children on a side row rather than in the middle front, so that some restless movement or standing can be allowed without undue distraction to other students. Johnson (1991) also stated that desks should be

arranged so that all students face the wall used for instruction and to minimize distractions on that wall.

Wherever the student with ADD-HD sits, Gordon (1994) contends that teachers should just as importantly consider the classmates who sit next to the child with ADD-HD. It is best to surround the ADD-HD child with peer models who are well behaved and who show a high rate of on-task behavior. This often encourages and motivates the student with ADD-HD to mirror the behavior of their seatmates (Gordon, 1994).

STIMULATION OF THE ENVIRONMENT

While the majority of recent researchers believe creating a stimulating learning environment for students with ADD-HD can improve performance and behavior of students with ADD-HD (Dept of Education, 1994), such wasn't always the school of thought. Fine (1977) reminds us that one of the primary elements of the early Strauss-Lehtinen-Cruickshank educational design was reduced environmental stimuli. To reduce stimuli, a room was provided with bulletin boards, pictures, and other extraneous objects removed. The color of the walls, woodwork, and furniture matched the floor color, and windows were covered or opaqued (Fine, 1977). Other early designs advised teachers to remove visual distracters (e.g., colorful pictures, posters, brightly colored clothing and jewelry) and auditory distracters. Barkley's research in 1991 showed that this type approach has generally not found that they lead to improvement in classroom behavior or academic performance of hyperactive children.

Bulletin Boards. While the Strauss-Lehtinen-Cruickshank model called for removing bulletin boards to reduce environmental stimuli, Fine (1977) learned that Hewett's model called

for replacing them, and making them functionally stimulating, versus visually stimulating. Hewett's Engineered Classroom had three functional bulletin boards. One displayed completed student work, the second contained daily work packets, and the third contained work report records displaying check marks that could be exchanged for tangible awards (Fine, 1977). Bulletin boards should be mounted on the sides or back of the room versus the front, so as to not distract from the main direction of instruction (Johnson, 1991).

SUMMARY AND CONCLUSIONS

The original intent of this paper was to collect and categorize the most effective general classroom interventions available for teachers of students with ADD-HD. I envisioned a checklist-type format that I could handily use when I start teaching. However, as the research deepened, I was overwhelmed with the amount of published information available on the categories and sub-categories on the subject of classroom structural interventions for children with ADD-HD. Therefore, the focus was narrowed to view and contrast only a handful of these structural interventions. Future research needs to address the many other types of structural interventions available for teachers to employ. After this future research is conducted, I still want to create a customized checklist of interventions.

Because an estimated 3 to 10 percent of all school-age children suffer from the health impairment known as Attention Deficit Disorder-Hyperactivity Disorder, (ADD-HD), the odds are very high that general classroom teachers will have their first encounter with an ADD-HD student early in their teaching careers (McFarland, Kolstad, Briggs, 1995). If teachers want their

students with ADD-HD to succeed, it is imperative that teachers be well prepared to offer effective classroom interventions.

Numerous types of special structural interventions have been suggested for ADD-HD children in this paper, but none has demonstrated magical properties. It is clear that no single educational program or strategy is suitable for all ADD-HD children (Fine, 1977). It could be tempting for a frustrated general classroom teacher to apply some of these interventions just "to see if it works." However, the summary of the experts I researched advise teachers not to do so.

A well thought-out intervention plan using the inputs of parents, teachers, and special education practitioners in developing the Individualized Education Plan (IEP) process is the most highly recommended method to serve the child with ADD-HD. On the other hand, the Chesapeake Institute (1994) contends that teachers should not feel they have to wait for the formal IEP decision before they start implementing structural intervention strategies. Many of these interventions will be effective even if the student does not have ADD-HD but has problems causing inattention, distractibility, and/or hyperactivity. As Lerner (1995) reminds us, students with ADD-HD are the most challenging for the general classroom teacher, and there lies the importance of this research and bottom line -- **"I need to know this stuff on Day 1 of my first teaching job!**

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